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2021 Ram 1500 TRX: Quickest, Fastest and Most Powerful Mass-produced Truck in the World With 702-horsepower 6.2-liter Supercharged HEMI® V-8 Engine

- 2021 Ram 1500 TRX sets the benchmark for extreme-performance pickup trucks with 702 horsepower and 650 lb.-ft. of torque courtesy of the legendary 6.2-liter supercharged HEMI® V-8 engine
- Ram TRX sprints to a top speed of 118 miles per hour (mph) and delivers a new level of performance: 0-60 mph in 4.5 seconds, 0-100 mph in 10.5 seconds and quarter mile in 12.9 seconds at 108 mph
- High-torque-capacity TorqueFlite 8HP95 eight-speed automatic transmission delivers quick, crisp gear changes during both normal and performance driving conditions
- New, innovative dual-path air induction system delivers maximum output and feeds the 6.2-liter supercharged HEMI V-8 engine a steady supply of cool, clean air through the front grille and functional hood scoop
- Largest air filter in the segment uses dual filter elements and is designed for extreme, dusty environments with four times the dust-trapping capacity when compared to the closest competitor
- Dual-element charge air coolers in supercharger use a dedicated cooling circuit designed to keep high-density air flowing into the engine
- Extreme performance calls for robust engine components, such as a cast-iron block, forged-steel crankshaft, specially tuned dual-mass crankshaft damper, high-strength, forged-alloy pistons and powder-forged connecting rods with high-load-capacity bushings and diamond-like carbon (DLC) coated piston pins
- Thermal Management heat exchanger system allows engine and transmission lubricants to warm quickly and maintain optimal temperature, regardless of external temperatures and driving style
- Ram TRX-specific oil pan system includes a purpose-designed baffle system and integrated oil pickup circuit to control oil flow during extreme off-road driving maneuvers
- Dual exhaust with integrated 5-inch tips is standard; electronically controlled system delivers low back-pressure and an exhilarating and unmistakable exhaust note
- Launch Control is standard and optimizes vehicle performance by coordinating engine, transmission, driveline and suspension for a textbook launch and consistent straight-line acceleration
- Jump Detection in Ram TRX uses wheel-speed and ride-height sensors and accelerometers in each corner to identify when the vehicle is airborne, enabling the powertrain control system to minimize driveline-damaging power spikes

August 17, 2020, Auburn Hills, Mich. - The new 2021 Ram 1500 TRX is the apex predator of the truck world, cementing Ram Truck as North America's off-road truck leader. Engineered to dominate the most challenging off-road and paved-road environments, the Ram TRX sets new benchmarks for power and performance among half-ton pickup trucks with the 6.2-liter supercharged HEMI® V-8 engine.

"The new 2021 Ram TRX demands an engine with specific abilities and robust power delivery to perform in the most extreme environments," said Micky Bly, Head of Global Propulsion Systems, FCA. "The proven 6.2-liter supercharged HEMI V-8 engine moves the Ram TRX through punishing terrain at a ferocious pace."

Rated at 702 horsepower and 650 lb.-ft. of torque, the 6.2-liter supercharged HEMI V-8 engine powers the Ram TRX to a top speed of 118 miles per hour (mph). Combined with a high-torque-capacity TorqueFlite eight-speed automatic

transmission, the Ram TRX delivers a new level of performance: 0-60 mph in 4.5 seconds, 0-100 mph in 10.5 seconds and the quarter mile in 12.9 seconds at 108 mph.

A proven and reliable high-performance engine, the 6.2-liter supercharged HEMI V-8 engine delivers top output for extended driving sessions without degradation in performance.

A new, innovative dual-path induction system engineered for extreme performance

The new 2021 Ram TRX is designed for class-leading, uncompromising performance in the harshest environments. Stratospheric power and performance numbers were achieved in part through a new, innovative dual-path air induction system that ensures the 6.2-liter supercharged HEMI V-8 engine receives a steady supply of clean, cool air regardless of inbound dirt and debris.

Making sure the engine gets all the clean, cool air it needs to crank out 702 horsepower and 650 lb.-ft. of torque, the Ram TRX uses two paths to draw in outside air and routes it to a large, 29-liter air box that filters out dirt, sand, debris and water before they get anywhere near the engine.

The innovative dual-path system pulls in outside air from a functional scoop in the hood and the upper edge of the grille. Air entering the grille flows to the bottom front of the air box, guided by tailored panels. The hood scoop ducts air to the bottom rear of the air box via ports that seal to the hood when it is closed. An air box support bar is precision-mounted in the engine compartment during vehicle assembly to ensure the hood intake seals to the air box ducts to prevent engine-heated air from entering the system.

Directing incoming air to the bottom of the air box helps dirt and water settle out before the air reaches the filter elements, ensuring that the Ram TRX continues to perform in the most grueling environments. A one-way drain in the bottom of the air box evacuates water even when the vehicle is moving. Intake air is drawn upward from the box through twin, heavy-duty air filters that provide 198.4 square inches of filter surface area, four times the dust trapping capacity when compared to the closest competitor and two-and-a-half times more than the standard Ram 1500 air filter, to remove any residual dust or sand before the air is ducted to the 92-mm throttle body and into the 2.38-liter per revolution twin-screw supercharger. Unfolded, the filter surface medium covers 13.3 square feet.

The entire Ram TRX intake system is engineered to minimize power-robbing air restrictions while ensuring only clean, cool air reaches the engine.

Industry-standard testing shows that the Ram TRX far exceeds any competitor in the amount of time it can ingest dirty air and debris before performance is diminished. The Ram TRX's air box is mounted at the top of the engine, making it easy to access should the owner choose to field-clean the high-performance filter elements.

The supercharged 6.2-liter HEMI V-8 is tailored to the Ram TRX with a rear-sump oil pan that contains a system of baffles to help manage oil flow and supply during extreme off-road driving maneuvers. L-shaped scrapers attached to the crankshaft help move oil, which leaves the crankshaft at up to 200 mph, from the crankcase back to the oil sump.

The 2021 Ram TRX is fitted with free-flowing cast stainless steel exhaust manifolds that feed into low-restriction five-inch Black Chrome dual exhaust tips. This new dual exhaust system with an electric-activated valve design provides an exhilarating and unmistakable sound during wide-open throttle acceleration.

With a high-mounted alternator, the new 2021 Ram TRX can traverse up to 32 inches of water.

Bold, boosted power

From modern muscle cars to high-performance SUVs, the 6.2-liter supercharged HEMI V-8 has earned a reputation as a potent, reliable power source that delivers head-turning power when ordered by the driver's right foot and is also a smooth, efficient power plant at cruising speeds.

The focus of the engine is the supercharger with close-set twin-screw rotors and a pair of charge air coolers integrated in the housing. A separate, dedicated cooling circuit for the charge air coolers includes a pump, coolant reservoir and heat exchanger. At wide open throttle, the charge air coolers reject 40 kilowatts of heat from the

compressed air – equivalent to the output of 26 home space heaters.

An integrated electronic bypass valve regulates boost pressure to a maximum of 11.6 PSI (80 kPa). The supercharger uses a drive ratio of 2.36:1 and has a maximum speed of 14,600 rpm. It is sealed for life with a premium synthetic oil specifically tailored to protect the rotor timing gears and bearings.

Other key components of the supercharged 6.2-liter HEMI V-8 include:

- Cast-iron engine block with water jackets between the cylinders for optimal cooling
- Forged-steel crankshaft with induction-hardened bearing surfaces
- Specially tuned dual mass crankshaft damper, burst-tested to 13,000 rpm
- High-strength, forged-alloy pistons
- Powder-forged connecting rods with high-load-capacity bushings and diamond-like carbon (DLC) coated piston pins
- Piston-cooling oil jets
- Heat-treated aluminum-alloy cylinder heads
- Sodium-cooled exhaust valves, hollow-stem intake valves and steel-alloy heads that stand up to temperatures as high as 1,652 degrees Fahrenheit (900 degrees Celsius)
- External oil cooler

Dual in-tank, high-flow, multi-mode pumps tailor fuel delivery to the driver's power demands.

TorqueFlite delivers crisp, quick gear changes

The 6.2-liter supercharged HEMI V-8 in the Ram TRX is paired to a robust TorqueFlite 8HP95 eight-speed automatic transmission. This versatile, well-developed, high-torque-capacity eight-speed transmission delivers quick acceleration and precise, crisp, quick gear changes, enhancing ride quality to luxury car levels with consistent performance and drivability.

To best match gear selection and shift points to the driver's demands, the transmission software monitors inputs, such as engine torque gradients, throttle kick-down, longitudinal and lateral acceleration, detection of friction, downshifts and road grade.

Launch Control is standard with the 2021 Ram TRX. Launch Control manages tire slip while launching the vehicle to give the driver consistent straight-line acceleration. Wheel speed sensors watch for driveline-damaging wheel hop at launch and, in milliseconds, provide inputs to the powertrain control module to modify the engine torque to regain full grip.

The Ram TRX is also equipped with Jump Detection, which uses wheel speed and ride height sensors and accelerometers at each corner to identify when the vehicle is airborne and acts to prevent driveline-damaging power spikes. Acting in milliseconds, Jump Detection modifies engine speed and torque, gear selection, transfer case torque split, damping rates and other powertrain and suspension components through the landing to deliver optimum performance.

Dynamic Drive Modes

The 2021 Ram TRX uses performance-tuned software to pre-configure and distinguish five dynamic modes – Auto, Sport, Tow, Snow and Custom – enabling drivers to choose a vehicle setting that ideally meets their requirements and ambient conditions. The drive modes separately control the four-wheel-drive system, throttle response, transmission, paddle shifters, suspension and the electric power steering.

Dynamic on-road drive mode configurations include:

- Auto — Automatically adapts to any condition; uses 40/60 front/rear torque split
- Sport — Transmission shift times are reduced by 50 percent versus Auto mode; stability control, four-wheel-drive system and steering systems are set for typical enthusiast driving style; paddle shifters are enabled and suspension is tightened up without increasing impact harshness to deliver increased vehicle performance capability over Auto mode; uses 30/70 torque split
- Tow — Alters torque delivery off the line for greater smoothness and adjusts suspension to combat pitch

and yaw to deliver maximum towing performance; uses 45/55 torque split

- Snow — Maximizes traction to deliver optimized performance on snow and ice with reduced engine horsepower; uses 45/55 torque split

The Ram TRX also features a Custom mode that allows the driver to personalize the vehicle's performance with a selectable driving experience, offering a multitude of vehicle system combinations.

Separately, the Ram TRX features three dynamic off-road modes – Mud/Sand, Rock and Baja – enabling drivers to choose a setting that best fits the terrain around them. Like the on-road modes, the off-road drive modes control several systems, including the four-wheel-drive system, throttle response, transmission, paddle shifters, suspension and steering.

Off-road drive mode configurations include:

- Mud/Sand – Minimizes wheel spin, recalibrates throttle management and torque distribution to mitigate wheel slip and improve traction; uses 45/55 torque split
- Rock – Accessible in 4Lo, recalibrates the rear locking axle and Hill-descent Control; uses 50/50 torque split
- Baja — Transmission shift times are reduced 68 percent versus Auto mode to 160 milliseconds; stability control, four-wheel-drive and steering systems are set for ultimate desert performance; paddle shifters are enabled and suspension is set to full damping to deliver maximum vehicle performance capability on undulating, loose surfaces; uses 25/75 torque split

A Valet mode is also standard on the Ram TRX and enables the following configurations:

- Engine is remapped to significantly reduce horsepower and torque; limited to 4,000 rpm
- Transmission locks out access to first gear and upshifts earlier than normal
- Traction, steering and suspension are set to their Street settings
- Steering-wheel paddle shifters are disabled
- Drive Mode functions are disabled
- Electronic stability control (ESC) is enabled to full-on
- Launch Control is disabled

Drivers can activate and deactivate Valet mode with a personalized four-digit PIN code.

Unsurpassed Powertrain Warranty – five years/60,000 miles

The 2021 Ram TRX is backed with a five-year/60,000-mile Powertrain Limited Warranty. The Powertrain Limited Warranty covers the cost of all parts and labor needed to repair a covered powertrain component – engine, transmission and drive system. The warranty is also transferable, allowing customers who sell their truck during the warranty period to pass the coverage to the new owner.

The standard three-year/36,000-mile Basic Limited Warranty provides bumper-to-bumper coverage for the Ram TRX, from the body to the electrical system.

Ram Truck Brand

In 2009, the Ram Truck brand launched as a stand-alone division, focused on meeting the demands of truck buyers and delivering benchmark-quality vehicles. With a full lineup of trucks - the Ram 1500, 2500/3500 Heavy Duty, 3500/4500/5500 Chassis Cab and ProMaster - the Ram brand builds trucks that get the hard work done and families where they need to go.

Ram continues to outperform the competition and sets the benchmark for:

- Best-in-class standard horsepower
- Segment-first 1,000 lb.-ft of torque with Cummins Turbo Diesel
- Most luxurious: Ram 1500 Tungsten with real metal and leather elements and a new 14.5-inch Uconnect touchscreen
- Best ride and handling with a double wishbone front suspension and five-link solid rear axle with available, segment-exclusive, active-level, four-corner air suspension
- Best-in-class available rear leg room
- The most cargo space available in any traditional full size cargo van

- Most capable full-size off-road pickup – Ram Power Wagon
- Most awarded light-duty truck in America
- Highest owner loyalty of any half-ton pickup

The latest [J.D. Power APEAL study](#), which rates the emotional bond between customers and their vehicles, named the 2023 Ram 1500 as the best full-size light-duty pickup.

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